

Source of data for the plotting and computation is Table 4 of the paper draft.

$W_{\gamma Pb,n}$ (GeV)	σ (μb)	unc. (μb)	corr. (μb)	mig. (μb)	flux frac. (μb)	IA (μb)
19.12	8.80	0.30	0.67	0.12	0.06	13
813.05	60.23	19.94	8.21	15.22	8.81	196
24.55	13.86	0.23	1.10	0.19	0.11	18
633.21	47.80	6.50	10.76	8.73	5.16	167
31.53	16.78	0.59	1.31	0.35	0.25	22
493.14	46.00	6.32	5.30	6.72	4.22	142
97.11	20.21	5.14	3.13	7.53	3.81	49
160.10	27.03	7.40	4.96	10.94	5.44	68
124.69	24.10	0.70	1.36	0.23	0.15	58

Putting these values to arrays which are used in the code.

The energy:

$$W_{\gamma Pb,n} = \{ 19.12, 813.05, 24.55, 633.21, 31.53, 493.14, 97.11, 160.1, 124.69 \};$$

The data cross section and the uncertainty due to the flux:

$$\sigma_{\gamma Pb}^{Data}[9] = \{ 8.80, 60.23, 13.86, 47.80, 16.78, 46.00, 20.21, 27.03, 24.10 \};$$

$$\Delta\sigma_{\gamma Pb}^{Data}[9] = \{ 0.06, 8.81, 0.11, 5.16, 0.25, 4.22, 3.81, 5.44, 0.15 \};$$

The IA cross section and the corresponding uncertainty:

$$\sigma_{\gamma Pb}^{IA}[9] = \{ 13.20, 196.34, 17.95, 166.89, 22.46, 141.85, 49.16, 68.19, 57.92 \};$$

$$\Delta\sigma_{\gamma Pb}^{IA}[9] = \{ 0.66, 9.82, 0.90, 8.35, 1.12, 7.09, 2.46, 3.41, 2.90 \};$$

The formula to compute the nuclear suppression factor is:

$$S_{Pb} = \sqrt{\frac{\sigma_{\gamma Pb}^{Data}}{\sigma_{\gamma Pb}^{IA}}} \quad (1)$$

Then the error propagation formula is (considering the errors are uncorrelated)

$$\Delta S_{Pb} = \sqrt{(\Delta\sigma_{\gamma Pb}^{Data})^2 \left(\frac{\partial S}{\partial \sigma_{\gamma Pb}^{Data}} \right)^2 + (\Delta\sigma_{\gamma Pb}^{IA})^2 \left(\frac{\partial S}{\partial \sigma_{\gamma Pb}^{IA}} \right)^2} \quad (2)$$

Doing the derivatives (omitting the minus signs as they will be squared anyway)

$$\Delta S_{Pb} = \sqrt{(\Delta \sigma_{\gamma Pb}^{Data})^2 \left(\frac{1}{2 \sigma_{\gamma Pb}^{IA} \sqrt{\frac{\sigma_{\gamma Pb}^{Data}}{\sigma_{\gamma Pb}^{IA}}}} \right)^2 + (\Delta \sigma_{\gamma Pb}^{IA})^2 \left(\frac{\sigma_{\gamma Pb}^{Data}}{2 (\sigma_{\gamma Pb}^{IA})^2 \sqrt{\frac{\sigma_{\gamma Pb}^{Data}}{\sigma_{\gamma Pb}^{IA}}}} \right)^2} \quad (3)$$

Squaring and simplifying the brackets to get the final result

$$\Delta S_{Pb} = \sqrt{(\Delta \sigma_{\gamma Pb}^{Data})^2 \left(\frac{1}{4 \sigma_{\gamma Pb}^{IA} \sigma_{\gamma Pb}^{Data}} \right) + (\Delta \sigma_{\gamma Pb}^{IA})^2 \left(\frac{\sigma_{\gamma Pb}^{Data}}{4 (\sigma_{\gamma Pb}^{IA})^3} \right)} \quad (4)$$